

# MANURE ON FROZEN & SNOW-COVERED GROUND

A REPORT TO THE GOVERNOR AND GENERAL ASSEMBLY

FEBRUARY 15, 2013



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IOWA DEPARTMENT OF NATURAL RESOURCES

This report fulfills the requirements of Code of Iowa Sections 459.313B Application of  
Liquid Manure on Snow-Covered Ground or Frozen Ground – Annual Report

## **Background**

In 2009, the General Assembly passed legislation that limits the surface application of liquid manure from confinement feeding operations during the winter. This legislation was designed to address the surface runoff and water pollution problems that may occur when liquid manure is surface applied on frozen or snow-covered ground.

Those water quality problems are most prevalent during late winter application. For that reason, the legislation purposely restricted surface liquid manure application except in emergency situations. Specifically, those confinements large enough to require a manure management plan (more than 500 animal units) are prohibited from surface applying if the liquid manure cannot be injected or incorporated, from:

Dec. 21 to April 1 on snow-covered ground, and  
Feb. 1 to April 1 if the ground is frozen.

The legislation leaves a window of opportunity for producers to surface apply liquid manure early in the winter, or at any time the ground is not snow-covered or frozen. The limits on late winter application also encourage producers to plan for manure management, resulting in more nutrient uptake and better water quality.

The General Assembly defined what constitutes an emergency and explicitly stated that the failure to properly account for the volume to be stored is not an emergency. The law gave several examples of emergencies indicating they would be limited to infrequent events that could generally not be avoided such as a natural disaster, unusual weather conditions, or equipment or structural failure.

In 2010, producers who were concerned about having inadequate liquid manure storage, and consequently having to apply manure during the winter, asked the Environmental Protection Commission for more time to improve their storage capacity. In the final adoption of rules, commissioners approved giving confinement producers with inadequate storage an extension to do emergency application through the 2014-2015 winter. This gave producers additional time to make decisions and make appropriate changes to their operations.

Producers who anticipate needing emergency land application are required to identify suitable fields in their manure management plans (MMPs). The law places additional restrictions on land application such as defining the types of fields where application would be allowed and protecting tile intakes. Starting Dec. 21, 2009, producers began notifying the appropriate DNR regional field office prior to application.

### **Requests for Emergency Application in 2012 - 2013**

Most of the state had nearly ideal weather conditions for manure application following harvest in the fall of 2012 and well into 2013. Dry weather and no snow meant most producers had many weeks to empty liquid manure storage structures and land apply manure, making requests for emergency application after Dec. 21 unlikely. That proved

true, and by Feb. 15, 2013, the DNR had received two requests for emergency surface application from producers affected by the law. This compares with nine requests from producers who lacked sufficient storage during the winter of 2010-2011 and zero requests the winter of 2011-2012, which was also dry. In contrast, there were 43 requests during the winter of 2009-2010 when a wet fall and early snowfalls limited after-harvest manure application.

An additional two producers contacted field offices with concerns about winter manure application in 2012-2013. As open feedlots (uncovered or partially roofed), neither one was required to report emergency application on snow-covered or frozen ground. Consequently, they are not required to abstain from or report emergency manure application on frozen or snow-covered ground. Field staff assisted these producers in identifying safe areas for land application.

**Table 1: Number of Requests for Emergency Application by DNR Field Office Area**

Region of State	Number of Requests			
	Winter 2009-2010	Winter 2010-2011	Winter 2011-2012	Winter 2012-2013
Northeast	7	5	0	0
North central	5	2	0	1
Northwest	11	1	0	1
Southwest	8	0	0	0
South central	9	1	0	0
Southeast	3	0	0	0
Total	43	9	0	2

As inquiries come into field offices, DNR staff and producers work together to decide on options for land application, the requirements for fields eligible for emergency surface application and the risks of surface runoff and water pollution when applying during late winter to frozen or snow-covered ground. Together, staff and producers sort through and identify the best possible sites to surface apply manure.

## Complaints

It's clear that confinements needing an MMP are not the only type of facility that poses a potential risk to surface water quality as snow melt and thawing occur. Other types of livestock and poultry facilities can also cause runoff or pollution issues. There were no complaints concerning manure application on snow-covered or frozen ground in 2012-2013 as of Feb. 15, 2013.

In past years, almost 78 percent of the complaints reported to the DNR about manure application on snow-covered or frozen ground concerned producers not regulated under this law. In 2009-2010, nearly half (45 percent) of complaints about winter manure application were about small animal feeding confinements that are not regulated. During the 2010-2011 winter, less than 22 percent of complaints concerned regulated confinements spreading liquid manure.

From the producer and complainants' viewpoints, problems occur at all types of facilities, not just larger confinement feeding operations.

### **Follow-up and Implications**

There are currently 6,013 confinement feeding operations in the state with an animal unit capacity of 500 or more. Confinements of this size are required to notify the DNR and have approval before building, modifying or expanding. They are also required to have manure management plans and use a certified manure applicator. Each facility is required to keep records of manure application and plan changes, submit annual plan updates to the DNR, and take soil fertility tests at least once every four years. If they handle liquid manure, the same facilities are required to limit liquid manure application on frozen or snow-covered ground.

Obviously weather plays a large role in how well confinement facilities can comply with state law on winter manure application – the warmer and drier the weather, and the later it freezes or snows, the easier it is to complete liquid manure application in the fall or early winter. However, producers also have a responsibility to have adequate manure storage or to consider alternative ways to store or transport manure if there is an early freeze or snowfall. Several confinements added manure storage structures recently – seven in 2010, five in 2011 and six in 2012 – indicating producers want to ensure they have adequate liquid manure storage.

Good weather, good management and additional storage have successfully prevented manure spills this winter.

Trends in construction of animal confinements indicate many new facilities are planned for construction or expansion in the coming year. (See Table 2 below.)

**Table 2: New Construction Applications Received 2006 to 2012**

<b>New Construction 2006 - 2012</b>	<b>2012 Totals</b>	<b>2011 Totals</b>	<b>2010 Totals</b>	<b>2009 Totals</b>	<b>2008 Totals</b>	<b>2007 Totals</b>	<b>2006 Totals</b>
Permitted Hogs (new)	80	10	2	5	98	125	172
Permitted Hogs (expansions)	102	76	16	20	96	117	99
Unpermitted Hogs (new)	267	121	28	26	200	362	441
Unpermitted Hogs (expansions)	60	36	16	12	31	50	62
Permitted Poultry	3	3	3	5	9	2	3
Permitted Open Cattle lots	21	15	5	7	13	7	33
Permitted Confined Beef Cattle	11	15	3	2	5	9	5
Permitted Confined Dairy Cattle	14	3	2	8	9	5	4
Unpermitted Confined Beef/Dairy	17	20	8	7	8	10	13
Permitted Combined Operation	1	10	14	11	NA	NA	NA
<b>Totals</b>	<b>576</b>	<b>309</b>	<b>97</b>	<b>103</b>	<b>469</b>	<b>687</b>	<b>832</b>

Construction permit applications for permitted facilities were up again in 2012. An estimated 30 to 40 of the permit applications were strictly for expansion, increasing the number of head at the facility but not requiring construction.

Iowa's animal producers are taking the requirements for winter application seriously. The combination of good management and a mild winter has kept the nutrient value of the manure on the field where it can be used for this year's crop. In addition, producers are continuing to increase their storage capacities to reduce the likelihood of having to apply manure during the winter season.